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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/054,365	11/12/2001	Carol W. Readhead	18810-81606	9234

23595 7590 09/23/2005
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EXAMINER

WOITACH, JOSEPH T

ART UNIT	PAPER NUMBER
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1632

DATE MAILED: 09/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/054,365

Applicant(s)

READHEAD ET AL

Examiner

Joseph T. Weitach

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply:

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 135-144, 152-161, 168-176 and 183-211 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 135-144, 152-161, 168-176 and 183-211 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

This application is a divisional of 09/191,920, filed November 13, 1998, which claims benefit to provisional application 60/065,825 filed November 14, 1997.

Applicants' amendment filed January 9, 2004, has been received and entered. Claims 145-151, 162-167 and 177-182 have been canceled. Claims 144 and 168 have been amended. Claims 135-144, 152-161 and 168-176 are pending.

Election/Restriction

Applicant's election of Group I, claims 145-151, 162-167 and 177-182, is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). It is noted that claims drawn to a the non-elected inventions have been canceled. Claims 135-144, 152-161 and 168-176 are pending and currently under examination as they are drawn to a non-human transgenic vertebrate.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i). Claims 135-144, 152-161 and 168-176 are pending and currently under examination.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 152 and 168 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, claim 152 is unclear in the recitation of "encoding a desired trait" because genes encode proteins not traits. A particular phenotype may result as a consequence of a genes expression, but the gene does not encode a trait or phenotype.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 135-144, 152-161 and 168-176 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 135 of copending Application No. 10/074,945. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instantly claimed transgenic vertebrates would necessarily result in practicing the method of claim 135. For example, claim 168

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specifically recites the same method steps of claim 135. It is noted that the preamble of claim 135 is generally directed to gene therapy, however the outcome and animal that results from practicing the claimed method would inherently be the same as instantly claimed.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 135-144, 152-161 and 168-176 are rejected under 35 U.S.C. 102(e) as being anticipated by Brinster *et al.* (US Patent 5,858,354).

Claims 135-144, 152-161 and 168-176 are broadly drawn to a non-human transgenic vertebrate. It is noted that the transgenic vertebrate are generated as product by process, however these process steps do not exclude transgenic animals made by other means. Brinster *et al.* teaches a method for making a genetically altered transgenic animal wherein germ cells are genetically altered *in vitro* and subsequently transplanted back into the seminiferous tubules. The allowed claims specifically set forth transducing the cell type of spermatogonia, however the

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specification provides for other male germ cells to be collected and used in the claimed methods. Practicing the methods claimed by Brinster *et al.* result in a transgenic animal comprising germ cells that have been genetically modified with a transgene.

Where, as here, the claimed and prior art products are identical or substantially identical, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product. Whether the rejection is based on "inherency" under 35 USC 102, or "*prima facie* obviousness" under 35 USC 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced by the PTO's inability to manufacture products or to obtain and compare prior art products. *In re Best, Bolton, and Shaw*, 195 USPQ 430, 433 (CCPA 1977) citing *In re Brown*, 59 CCPA 1036, 459 F.2d 531, 173 USPQ 685 (1972).

Claims 135-144, 152-161 and 168-176 are rejected under 35 U.S.C. 102(e) as being anticipated by Deboer *et al.* (US Patent 5,741,957).

Deboer *et al.* teach a method of making a transgenic bovine whose genome comprises an transgene that is preferentially expressed in the mammary gland (see abstract). It is noted that the methods of Deboer *et al.* result in a transgenic animal in which both the germ cells and somatic cells contain the transgene, however the instantly pending claims do not exclude this possibility. Importantly, dependent claims directed to progeny will necessarily comprise the transgene in both the somatic cells and germ cells if produced by mating.

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Claims 135-144, 152-161 and 168-176 are rejected under 35 U.S.C. 102(b) as being anticipated by Leder *et al.* (US Patent 4,736,866).

Leder *et al.* teach a method of making non-human transgenic mammals whose genome comprises an activated oncogene (see abstract). It is noted that the methods of Leder *et al.* result in a transgenic animal in which both the germ cells and somatic cells contain the transgene, however the instantly pending claims do not exclude this possibility. Moreover, dependent claims directed to progeny will necessarily comprise the transgene in both the somatic cells and germ cells if produced by mating.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent 6,215,039 (Brinster *et al.*) is related to US Patent 5,858,354 and provides the same guidance at the '354 patent used in the basis of the rejection made under 35 USC 102(e) set forth above.

Conclusion

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Woitach whose telephone number is (571) 272-0739.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Reynolds, can be reached at (571) 272-0734.

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Any inquiry of a general nature or relating to the status of this application should be directed to the Group analyst Dianiece Jacobs whose telephone number is (571) 272-0532.

Joseph T. Voitach

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Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 8, 2005 has been entered.

DETAILED ACTION

This application is a divisional of 09/191,920, filed November 13, 1998, which claims benefit to provisional application 60/065,825 filed November 14, 1997.

Applicants' amendment filed July 8, 2005, has been received and entered. Claims 145-151, 162-167 and 177-182 have been canceled. Claims 183-211 have been added. Claims 135, 152, 154, and 168 have been amended. Claims 135-144, 152-161, 168-176 and 183-211 are pending.

Election/Restriction

Applicant's election of Group I was acknowledged. The newly added claims included in the instant amendment are drawn to the elected invention.

Claims 135-144, 152-161, 168-176 and 183-211 are pending and currently under examination as they are drawn to a non-human transgenic vertebrate.

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Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i). Claims 135-144, 152-161 and 168-176 are pending and currently under examination.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 135-144, 152-161, 168-176 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Specifically, independent claims 135 has been amended to indicate the nature of what is used and expressed in the method steps rendering the metes and bounds of the claims indefinite. First, the claims have been amended to recite "virus-derived DNA" however how similar or different from the starting material has not be set forth in the claim nor defined in the specification to clearly define the metes and bounds. Moreover, step (b) indicates that a "released polynucleotide" is provided to the germ cells, however there is no nexus between this and the new embodiment, in particular what is released, nor what is specifically incorporated. With respect to what is expressed, it is noted that a polynucleotide can only express a RNA or protein, and it is unclear how the breadth of "an agent" would be expressed. Further, the

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intended use renders the claim unclear and indefinite because determining the metes and bounds would rely on the use, not the product made. Dependent claims are included in the basis of the rejection because they fail to clarify the metes and bounds of the claims.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 135, 152, and 168 rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention is withdrawn.

The amendment to the claims to delete "the polynucleotide is one that does not encode oncogene products" considered new matter has obviated the basis of the rejections.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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Claims 135-144, 152-161 and 168-176 provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over copending Application No. 10/074,945 is withdrawn.

As noted by Applicants (page 15), 10/074,945 was been abandoned on June 25, 2004.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 135-144, 152-161, 168-176 and 183-211 are rejected under 35 U.S.C. 102(e) as being anticipated by Brinster *et al.* (US Patent 5,858,354) and Deboer *et al.* (US Patent 5,741,957).

Applicants argue that the amendments to the claims have differentiated the claimed invention from that disclosed by Brinster *et al.* and Deboer *et al.* In particular Applicants note that neither reference teaches that a viral vector was used in the construction of the transgenic animals, nor in the case of Deboer *et al.* teach germ cell manipulation to produce the claimed transgenic animal. Further, it is noted that the introduction of a viral vector into the testis would

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result in a different pattern of insertion, and could be distinguished from that produced by other methods. See Applicants' amendment, pages 16-18.

Examiner acknowledges that claims 135-144, 152-161 and 168-176 are generated as product by process, however these process steps do not exclude transgenic animals made by other means since the method steps do not result in a materially different transgenic animal than that produced by the methods of either Brinster *et al.* or Deboer *et al.* Moreover, it is noted that the claims only requirement for what is in the genome is "the polynucleotide encoding a gene product" (step (b)), where it was contained prior to insertion has no weight in the given claims. Moreover, the claims broadly encompass any "derived sequence" broadly encompassing almost any sequence. The claims do not set forth any limitation to what viral type sequences must be contained in the resulting transgenic, and a reasonable interpretation of "the released polynucleotide" that must be inserted in the genome would not include any other vector sequences if used.

Applicants statements that the methods would result in a different animal, however neither the specification nor the art of record indicate this to be fact. In addition to the absence of supporting the assertion, the specification provides no teaching that this "pattern of insertion" occurs, or any guidance to distinguish this unique property of the transgenic mammal from that obtained from any other methodology. There is not evidence that the resulting animals would be different as a consequence of practicing the different methods known in the art. Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

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As stated in the previous office action, Brinster *et al.* teaches a method for making a genetically altered transgenic animal wherein germ cells are genetically altered *in vitro* and subsequently transplanted back into the seminiferous tubules. The allowed claims specifically set forth transducing the cell type of spermatogonia, however the specification provides for other male germ cells to be collected and used in the claimed methods. Practicing the methods claimed by Brinster *et al.* result in a transgenic animal comprising germ cells that have been genetically modified with a transgene. Deboer *et al.* teach a method of making a transgenic bovine whose genome comprises a transgene that is preferentially expressed in the mammary gland (see abstract). It is noted that the methods of Deboer *et al.* result in a transgenic animal in which both the germ cells and somatic cells contain the transgene, however the instantly pending claims do not exclude this possibility. Importantly, dependent claims directed to progeny will necessarily comprise the transgene in both the somatic cells and germ cells if produced by mating.

Again, where, as here, the claimed and prior art products are identical or substantially identical, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product. Whether the rejection is based on "inherency" under 35 USC 102, or "*prima facie* obviousness" under 35 USC 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced by the PTO's inability to manufacture products or to obtain and compare prior art products. *In re Best, Bolton, and Shaw*, 195 USPQ 430, 433 (CCPA 1977) citing *In re Brown*, 59 CCPA 1036, 459 F.2d 531, 173 USPQ 685 (1972). It is maintained that a transgenic animal made by either the method of Brinster *et al.*, Deboer *et al.* or that set forth in the instant application would be distinguishable

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since the resulting animal could each have the same resulting transgene of an encoded gene product in operable linkage with a promoter.

Claims 135-144, 152-161, 168-176 and 184-211 are rejected under 35 U.S.C. 102(b) as being anticipated by Leder *et al.* (US Patent 4,736,866).

The amendment to the which now include the expression of oncogenes is noted. In particular Leder *et al.* teach the use of viral sequences, promoters and viral oncogenes, in the generation of transgenic animals, and reduce to practice, transgenic mice. Clearly, the teachings of Leder *et al.* anticipate the breadth of newly amended claims requiring only the use of virus or virus-derived DNA (see for example claim 135, step b). The amendment to the claims to include description of what is expressed from the transgene, it is noted that the model generated by Leder *et al.* is useful in studying "human or veterinary medicine", or studying the "well being" of the model system. With respect to newly added claims 184-211, it is noted that Leder *et al.* does not specifically teach the use of lentiviral vectors, however as discussed above, there instantly claimed transgenic vertebrate is a product by process, and there is no functional or structural limitations nor requirement in the resulting transgenic vertebrate that would distinguish it from another transgenic vertebrate made by a different process. Briefly, Leder *et al.* teach a method of making non-human transgenic mammals whose genome comprises an activated oncogene (see abstract). It is noted that the methods of Leder *et al.* result in a transgenic animal in which both the germ cells and somatic cells contain the transgene. Moreover, dependent claims directed to progeny will necessarily comprise the transgene in both the somatic cells and germ cells if produced by mating.

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Applicants' arguments that the claimed invention can be distinguished from the of Leder *et al.* are noted (page 18), however xenograft transplantation is only one potential use within the breadth of the claims. As discussed above, the model system can be used in human or veterinary medicine. Moreover, it should be noted that there is no specific requirement to what is considered suitable either anatomically or phenotypically in the specification, that would distinguish the present claims from any tissue type, because the 'suitability' is not set forth.

Conclusion

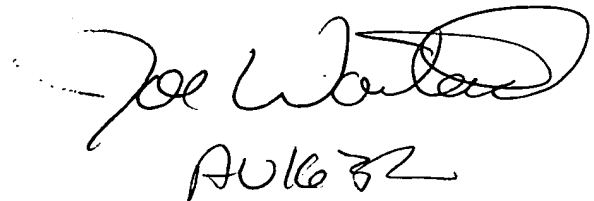
No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Woitach whose telephone number is (571) 272-0739.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla, can be reached at (571) 272-0735.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group analyst Dianiece Jacobs whose telephone number is (571) 272-0532.

Joseph T. Woitach



Joe Woitach
AUG 32